

SHERMAN, S.G.

Status and prospects for employment of patients with pulmonary tuberculosis in Leningrad. Probl.tub. 38 no.7:8-15 '60.  
(MIRA 14:1)

1. Iz organizatsionno-metodicheskogo otdela (rukovoditel' G.E. Al') Leningradskogo nauchno-issledovatel'skogo instituta tuberkuleza (dir. - prof. A.D. Semenov).  
(TUBERCULOUS--EMPLOYMENT)

GOL'DFARB, M.L.; SHERMAN, S.G.

Working capacity and employment of patients subjected to total or  
partial pneumonectomy in pulmonary tuberculosis. Vest. khir. 85  
no. 7:68-73 Je '60. (MIRA 14:1)  
(LUNGS—SURGERY) (DISABILITY EVALUATION)

L 13439-66 EWT(d)/EWT(m)/T/EWA(m)-2 IJP(c)

ACC NR: AP6002455

SOURCE CODE: UR/0057/65/035/012/2248/2249

AUTHOR: Abrosimov, N.K.; Nikolayeva, V.A.; Sherman, S.G.

ORG: Physico-technical Institute im. A.F.Ioffe, AN SSSR, Leningrad (Fiziko-  
tekhnicheskii institut AN SSSR)

TITLE: Approximate calculation of the efficiency of a mu-meson duct

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no. 12, 1965, 2248-2249

TOPIC TAGS: mu meson, pi meson, magnetic quadrupole lens, particle beam, ~~mathematic~~  
~~method~~ *pion scattering*

ABSTRACT: N.K.Abrosimov, D.M.Kaminker, I.A.Petrov, and S.G.Sherman (ZhTF, 34, 313, 1964) have proposed a method for estimating the efficiency of a magnetic quadrupole lens muon duct. This method involves evaluation of a triple integral. Here it is pointed out that the muon capture efficiency, which is a periodic function of  $z$ , is actually nearly independent of  $z$  when the pion momentum is high ( $z$  is presumably a coordinate measured along the duct; the notation of the earlier paper is employed and the reader is permitted to guess what the symbols mean), and that by assuming this quantity to be independent of  $z$  one can reduce the triple integral to a double integral. If the pion momentum scatter is small one can further reduce the triple integral to a single integral. The muon efficiencies of three ducts of different design were calculated as functions of the pion momentum and the results are presented

Card 1/2

UDC: 537.533.33

L 13439-66

ACC NR: AP6002455

graphically. The muon efficiency passes through a maximum at a certain pion momentum. The maximum muon efficiency increases and the pion momentum at which the maximum efficiency is reached decreases with increasing values of the ratio  $\ell/d$ , where  $\ell$  and  $d$  are two lengths that are presumably defined in the reference cited above. Orig. art. has: 6 formulas and 1 figure.

SUB CODE: 20

SUBM DATE: 14May65

ORIG. REF: 001

OTH REF: 000

Card

2/2

CHARUSHIN, G.V.; SHERMAN, S.I.

Two ways of speeding up the construction process of ~~fabrics~~  
diagrams. Sov.geol. 4 no.9:108-114 S '61. (MIRA 14:11)

1. Vostochno-Sibirskiy geologicheskii institut Sibirskogo  
otdeleniya AN SSSR.  
(Geology, Structural--Graphic methods)  
(Petrography)

KHRENOV, P.M.; CHERNOV, Yu.A.; SHERMAN, S.I.

Conference of young geologists of the Institute of the Earth's Crust.  
Geol.i geofiz. no.7:117-119 '63. (MIRA 16:10)

38311 SHERMAN, S. I.

Preparaty protiv malokroviya. Sov. meditsina, 1949, No 12, s. 29-30

- a. Meditsinskaya mikrobiologiya, immunologiya i  
parazitologiya. Epidemiologiya

SHERMAN, S.I.; LEVINA, D.A.

Effects of liver extract therapy in pernicious anemia. Klin.  
med., Moskva no.3:81-82 Mr '50. (CML 19:2)

1. Leningrad.



SHERMAN, S.I.

Classification of anemia. Klin.med., Moskva no.4:30-39 Ap '50.  
(GML 19:3)

1. Of the Hematological Clinic (Head -- Prof. S.I.Sherman) of the  
Leningrad Order of the Red Banner of Labor Institute of Blood  
Transfusion (Director -- Docent V.V.Kukharchik; Scientific Director--  
Prof. A.N.Filatov).

SHERMAN, S. I. Prof.

Anemia

Relation between gastric polyposis and Byermer's anemia. Klin. med. 30 No. 7, July 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 195~~7~~<sub>2</sub>, Uncl.

SHERMAN, S. I. (PROF)

USSR/Medicine - Post-Transfusion Hepatitis Dec 53

"The Prophylaxis of Post-Transfusion Virus Hepatitis,"  
Prof S. I. Sherman, S. I. Diakonovich, I. A.  
Yurikas, A. V. Blinova, A. V. Alekseyeva, R. S. Ger-  
mant, Leningrad Sci-Res Inst of Blood Transfn; Div  
of Virol, Inst Exptl Med, Acad Med Sci USSR, Len-  
ingrad

Klin Med, Vol 31, No 12, pp 57-61

Describes results of lab work on post-transfusion  
hepatitis conducted in 1946-1952. States that lab  
findings revealed the superiority of the qualitative  
bilirubin blood test (direct reaction) over the

274T28

quantitative test in the detn of a pre-jaundice or  
post-jaundice condition in blood donors.

SHERMANN, S. I

SHERMANN, S. I., professor; KISELEV, A. Ye., dotsent; PEREPLETCHIK, R. R.,  
kandidat tekhnicheskikh nauk; POVERGO, N. S.

Results of treating pernicious anemia with campolon derived from  
marine animals. Klin. med. 32 no. 6:53-57 Je '54. (MLRA 7:8)

1. Leningrad; iz gematologicheskoy kliniki (zav.-prof. S. I. Sherman),  
Leningradskogo nauchno-issledovatel'skogo instituta perelivaniya krovi.

(ANEMIA, PERNICIOUS, therapy

\*campolon)

(LIVER EXTRACTS, therapeutic use

\*campolon in pernicious anemia)

SHERMAN, S.I., prof.; ZHISLINA, Z.G.

Red blood picture in peptic ulcer. Akt.vop.perel.krovi no.4:198-200  
'55. (MIRA 13:1)

1. Gematologicheskaya klinika Leningradskogo instituta perelivaniya  
krovi.

(PEPTIC ULCER)

(ERYTHREMIA)

"Comparative Evaluation of the Effectiveness of Certain Methods for the Therapy of Chronic Leukosis Report 1: Therapy of Chronic Leukosis by X Rays," by Prof S. I. Sherman, Docent D. S. Kuz'min, L. M. Rozanova, A. N. Kiseleva, N. S. Fovergo, and A. D. Vaku-lenko (Reported at the expanded plenum of the Central Order of Lenin Institute of Hematology and Blood Transfusion on 15 Dec 1954 and at the Conference of the Leningrad Department of the All-Union Therapeutic Society imeni S. P. Botkin on 15 Nov 1955), Problemy Gematologii i Perelivaniya Krovi, Vol 2, No 1, Jan/Feb 57, pp 28-32

Experimental results classified into two tables showing the response of myelosis and lymphadenosis indicate that prolonged fractional irradiation of patients suffering from chronic leukosis with small doses of X rays (100 r) in combination with transfusion of concentrated suspensions of erythrocytes is the most expedient and effective method. This method gives good therapeutic effects without complications such as symptoms of radiation sickness.

SHERMAN, S.I., professor; KUZ'MIN, D.S., dotsent; ROZANOVA, L.M.; KISELEVA, A.N.; POVERGO, N.S.; VAKULANKO, A.D.

Comparative evaluation of the effectiveness of various methods of treating chronic leucosis. Report No.1: Treatment of chronic leucosis by X rays [with summary in English, p. 64] Probl. gemat. i perel. krovi 2 no.1:28-32 Ja-F '57 (MIRA 10:4)

1. Iz gematologicheskoy kliniki (zav.-prof. S.I. Sherman) Leningradskogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo instituta perelivaniia krovi (dir.-dotsent A.D. Belyakov; nauchnyy rukovoditel'-chlen-korrespondent AMN SSSR prof. A.N. Filatov)

(LEUKEMIA, ther.  
radiother. of chronic leukemia)  
(RADIOTHERAPY, in various dis.  
leukemia, chronic)

EXCERPTA MEDICA Sec 16 Vol 7/9 Cancer Sept 59

3806. Comparative evaluation of the efficacy of certain methods in the treatment of chronic leukaemias (X-rays, radioactive phosphorus, urethan, embichin, arsenic, busulphan). II & III (Russian text) SHERMAN S. I., KUZMIN D. S., ROZANOVA L. M., KISELEVA A. N., POVERGO N. S. and VAKULENKO A. D. *Probl. Gematol. i Perel. Krovi* 1958, 3/2 (26-34) and 62-63) Tables 3

117 patients with chronic leukaemia were treated with roentgen therapy. In most patients the period of remission lasted for from 6 to 9 months. Sixty-three patients with pronounced relapses underwent repeated roentgen therapy. In most patients a considerable improvement, permitting return to their original occupations, ensued. Radioactive phosphorus was used in 32 patients to avoid complications (anaemia, thrombocytopenia, exacerbation of the process); fractional peroral doses of  $P^{32}$ , 4.5-6.5 mc. per course, were given. Clinical and haematological remission took place in 25 patients, following the first course of treatment with  $P^{32}$ . Treatment of the remaining 7 patients produced no results. Long-range results of  $P^{32}$  therapy of chronic myeloid leukaemia are discussed. The authors conclude that the results of  $P^{32}$  treatment proved inferior to those of X-ray therapy. Immediate and long-term results in the treatment of chronic lymphocytic leukaemia with radioactive phosphorus are also set forth. The authors state that  $P^{32}$  is more effective in chronic lymphocytic leukaemia than in chronic myelosis.



SHERMAN, S.I., prof.; RABINOVICH, S.I.

The classification of Werlhof's disease. Probl. gemat. i perel. krovi  
3 no.5:17-20 S-O '58. (MIRA 11:11)

1. Iz gematologicheskoy kliniki (zav. - prof. S.I. Sherman) Leningradsko-  
go ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo institu-  
ta perelivaniya krovi (dir. - dots. A.D. Belyakov, nauchnyy rukovoditel'  
- chlen-korrespondent AMN SSSR prof. A.N. Filatov).

(PURPURA, THROMBOPENIC,

classif. on basis of funct. state of megakaryocytes &  
on clin. course (Rus))

(BONE MARROW, physiology

megakaryocyte funct. state, evaluation in classif. of  
thrombopenic purpuras (Rus))

TUSHINSKIY, Mikhail Dmitriyevich; YAROSHEVSKIY, Arnol'd Yakovlevich.  
Prinimali uchastiye: FILATOV, A.N.; AKKERMAN, V.V., doktor  
med.nauk; SHERMAN, S.I., prof.; TSIMMERMAN, N.A.. MYASNIKOV,  
A.L., prof., red.; SHUTSHER, N.V., red.; SENCHILO, K.K., tekhn.  
red.

[Blood system diseases] Bolezni sistemy krovi. Moskva, Gos.  
izd-vo med.lit-ry, 1959. 386 p. (MIRA 12:9)

1. Chlen-korrespondent AMN SSSR (for Filatov). 2. Deystvitel'nyy  
chlen AMN SSSR (for Myasnikov).  
(BLOOD--DISEASES)

SHERMAN, S.I., prof.; KUZ'MIN, D.S., dots.; ROZANOVA, L.M.; KISELEVA, A.N.;  
POVERGO, N.S.; VAKULENKO, A.D.

Comparative evaluation of the effectiveness of certain therapeutic  
methods in chronic leukemias; roentgen rays, radioactive phosphorus,  
urethan, embichin, arsenic, myleran. Report No.4 [with summary in  
English, p.61]. Probl.gemat. i perel.krovi 4 no.1:17-20 Ja-F '59.  
(MIRA 12:2)

1. Iz gematologicheskoy kliniki (zav. - prof. S.I. Sherman) Lenin-  
gradskogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'-  
skogo instituta perelivaniya krovi (dir. - dots. A.L. Belyakov,  
nauchnyy rukovoditel' - chlen-korrespondent AMN SSSR prof. A.N. Fi-  
latov).

(LEUKEMIA, therapy,  
comparison of various radiol. & chem.  
methods (Rus))

SHERMAN, S.I., prof.; KUZ'MIN, D.S., dotsent; ROZANOVA, L.M.; KISELEVA, A.N.:  
POVERGO, N.S.; VAKULENKO, A.D.

Comparative evaluation of the effectiveness of certain therapeutic  
methods in chronic leukemias; roentgen rays, radioactive phosphorus,  
urethane, embichine, arsenic, myleran. Report No.5: Probl. gemat. 1  
perel. krovi 4 no.5:14-18 My '59. (MIRA 12:7)

1. Iz gematologicheskoy kliniki (zav. - prof. S.I. Sherman) Leningrad-  
skogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo in-  
stituta perelivaniya krovi (dir. - dotsent A.D. Belyakov, nauchnyy  
rukovoditel' - chlen-korrespondent AMN SSSR prof. A.I. Filatov).  
(LEUKEMIA, therapy,  
comparison of various methods (Rus))

SHERMAN, S.I., prof.; KUZ'MIN, D.S., dotsent; ROZANOVA, L.M.; POVERGO, N.S.

Treatment of patients with chronic myelosis with myelosan in  
association with roentgen rays. Terap.arkh. 32 no.9:32-36 '60.  
(MIRA 14:1)

1. Iz gematologicheskoy kliniki (zav. - prof. S.I. Sherman)  
Leningradskogo ordena Trudovogo Krasnogo Znameni nauchno-  
issledovatel'skogo instituta perelivaniya krovi (nauchnyy ruko-  
voditel' - chlen-korrespondent AMN SSSR prof. A.N. Filatov).  
(BUSULFAM) (LEUKEMIA)

SHERMAN, S.I., prof.; BLINOVA, A.I.

Indications and contraindications for splenectomy in Werlhof's disease, hemolytic jaundice, the splenomegalic form of liver cirrhosis, and in thrombophlebitis splenomegaly. Probl.gemat.i perel.krovi 5 no.1:14-17 Ja '60. (MIRA 14:6)

1. Iz gematologicheskoy kliniki (zav. - prof. S.I. Sherman) i khirurgicheskoy kliniki (zav. - chlen-korrespondent AMN SSSR prof. A.N. Filatov) Leningradskogo ordena Trudovogo Krasnogo Znamehi instituta perelivaniya krovi (dir. - dotsent A.D. Belyakov).  
(SPLEEN—SURGERY) (LIVER—CIRRHOSIS)  
(ANEMIA) (PURPURA (PATHOLOGY))

SHERMAN, S.I., prof.; ROZANOV, L.M.

Interrelation between polycythemia vera and chronic myelosis.  
(MIRA 15:3)  
Terap.arkh. 34 no.3:99-104 '62.

1. Iz gematologicheskoy kliniki (zav. - prof. S.I. Sherman) Leningradskogo nauchno-issledovatel'skogo instituta perelivaniya krovi (dir. - dotsent A.D. Belyakov, nauchnyy rukovoditel' - chlen-korrespondent AMN SSSR prof. A.N. Filatov).  
(ERYTHEMIA) (MARROW-TUMORS)

BABCHIN, I.S., prof.; BABANOVA, A.G., doktor med. nauk; BLOKHIN, N.N.,  
 prof.; BONDARCHUK, A.V., prof.; GAL'PERIN, M.D., prof.;  
 GOL'DSHTEYN, L.M., prof.[deceased]; DYMARSKIY, L.Yu., kand. med.  
 nauk; KARPOV, N.A., prof.; KOYRO, M.A., nauchn. sotr.; LARIONOV,  
 L.F., prof.; LITVINOVA, Ye.V., kand. med. nauk; MEL'NIKOV, R.A.,  
 kand. med. nauk; NECHAYEVA, I.D., doktor med. nauk; PETROV,  
 Nikolay Nikolayevich, prof.; PETROV, Yu.V., kand. med.nauk;  
 RAKOV, A.I., prof.; ROGOVENKO, S.S., kand. med. nauk; SENDUL'SKIY,  
 I.Ya., prof.; SEREBROV, A.I., prof.; SMIRNOVA, I.N., kand. med.  
 nauk; TAL'MAN, I.M., prof.; TOBILEVICH, V.P., prof.; TRUKHALEV,  
 A.I., kand. med. nauk; KHOLDIN, Semen Abramovich, prof.;  
 CHEKHARINA, Ye.A., kand. med. nauk; CHECHULIN, A.S., kand. med.  
 nauk; SHAAK, V.A., prof.[deceased]; SHANIN, A.P., prof.; SHAPIRO,  
 I.N., prof.[deceased]; SHEMYAKINA, T.V., kand. med. nauk;  
 SHERMAN, S.I., prof.; ABRAMOV, L.V., red.; LEBEDEVA, Z.V., tekhn.  
 red.

[Malignant tumors]Zlokachestvennye opukholi; klinicheskoe ruko-  
 vodstvo. Leningrad, Medgiz. Vol.3. Pts.1-2. 1962. (MIRA 16:5)

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for  
 Blokhin, Petrov, Serebrov). 2. Chlen-korrespondent Akademii me-  
 ditsinskikh nauk SSSR (for Kholdin).

(CANCER)



YAKUBSON, A.K.; SHERMAN, S.M.

Treatment of lupus erythematosus with bigunal. Sov. med. 25 no.11:  
(MIRA 15:5)  
144-146 N '61.

1. Iz kliniki kozhnykh bolezney (zav. - prof. A.K.Yakubson) Novo-  
sibirskogo meditsinskogo instituta i gorodskogo venerologicheskogo  
dispansera (glavnyy vrach N.I.Sukhareva).  
(LUPUS ERYTHEMATOSUS) (PALUDRINE)

ZAGOSKIN, Yu.Э., inzh.; SHERMAN, V.L., inzh.

Screwdriver with flexible shaft for M5-M8 screws and nuts. Stroi.  
i dor. mash. 7 no.3:31-32 Mr '62. (MIRA 15:4)  
(Screwdrivers)

SHEMAN, V.L.; LEGON'KIKH, G.V.; KORSKOV, V.S., doktor tekhn. nauk,  
prof., retsenzent; NOVIKOV, M.P., kand. tekhn.nauk, red.;  
STROGANOV, L.P., inzh., red.; EL'KIND, V.D., tekhn. red.

[Mechanization of assembling operations in the instrument  
industry] Mekhanizatsiia sborochnykh rabot v priborostroenii.  
Moskva, Mashgiz, 1963. 466 p. (MIRA 17:2)

22843-66 EMT(m)/EPF(a)-2/EMP(v)/T/EMP(t)/EMP(k) IJP(c)

ACC NR: AP6011215

SOURCE CODE: UR/0413/66/000/006/0052/0053

INVENTOR: Gonserovskiy, F. G.; Sherman, V. P.

ORG: none

TITLE: Method of joining niobium and its alloys to vanadium. Class 21, No. 179855

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 52-53

TOPIC TAGS: welding, fusion welding, niobium, niobium alloy, niobium welding, alloy welding, vanadium, filler material, titanium, titanium filler, niobium titanium welding

ABSTRACT: This Author Certificate introduces a method of welding niobium and its alloys to vanadium. To ensure a high ductility of the weld, titanium is used as filler material. [ND]

SUB CODE: 13/ SUBM DATE: 22Apr64/ ATD PRESS: 4229

welding of dissimilar metals 18

Card

1/1

13K

UDC: 621.791.762.5.042

SM. 1. 1. 1.

Use of laser optical analysis methods in analyzing the  
preparation of a charge mixture. Zav. lab. 31 no. 10: 1119-  
1131 '66. (IIRA 19:1)

1. Ural'skiy nauchno-issledovatel'skiy khimicheskiy institut.

BABIN, M.; SHERMAN, Ya.

Metal scrap in excess of the plan. Prom.koop. 14 no.3:30 Mr  
'60. (MIRA 13:7)

1. Predsedatel' pravleniya arteli "Avtoguzhtransport," Saratov (for  
Babin). 2. Sekretar' partorganizatsii arteli "Avtoguzhtransport,"  
Saratov (for Sherman).  
(Scrap metal industry)

WIDOMAN, R. H., SHULMAN, H. L.

Viruses

From the history of the science of viruses; controversy between D. I. Ivanovskiy and M. V. Beijerinck. Mikrobiologiya 21 No. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1953<sup>2</sup>. Unclassified.

1ST AND 2ND ORDERS																									
PROCESSES AND PROPERTIES INDEX																									
<p><i>Effect of the method of preparing the slip on its characteristics.</i> YA. I. SHERMAN. <i>Steklo i Keram. Prom.</i>, 1944, No. 12, pp. 14-15. The relations between the process of preparing the slip and the characteristics of the slip and the finished products were studied with pressed and nonpressed slips containing kaolin 29, clay 23, quartz sand 28, scrap tile 18, and feldspar 2%. Water content was 33 to 35%, and the soda and liquid glass electrolytes were 0.3 to 0.45% by weight of the dry materials. The cycle of preparation was 18 hr. for the pressed slip and 8 to 9 hr. for the nonpressed slip; the latter required 2 to 3% more water and 0.1 to 0.15% more electrolytes than the former. The viscosity of the pressed slip and its tendency to thicken were somewhat lower than those of the nonpressed slip. The shrinkage of products dried at 105° was about the same, regardless of the method of preparation. Nonpressed slips fired at 1250° had a lower porosity than pressed slips. The mechanical strength of the products was about the same for both types of slips. The whiteness, determined by means of a photocell, was 65.7% for the pressed and 61.6% for the nonpressed type. On the basis of the results obtained, it is recommended that the nonpressed slips be used in casting structural and sanitary products. B.Z.K.</p>																									
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																									



19

CA

TESTING [ceramic] slips in the Stormer viscometer.  
 Va. I. Sherman. *Sikh'maya i Keram. Prom.* 1945,  
 No. 1/2, 10-17; *Ceram. Abstracts* 1948, 19 (in *J. Am.*  
*Ceram. Soc.* 31, No. 1).—An important advantage of the  
 Stormer viscometer is the ability to measure the viscosity  
 of any clay suspension or slip regardless of d. Viscosity  
 is calcd. from  $\eta = K(\rho/w)$ , where  $\rho$  = the load,  $w$  = the  
 angular velocity of rotation, and  $K$  = a const. dependent  
 on the dimensions of the cylinder. This viscometer can  
 also be used to det. the relative viscosity from  $\eta = t_1/t_2$   
 where  $t_1$  = the time required to make 100 revolutions in  
 the suspension and  $t_2$  = the time required to make 100  
 revolutions in distd. H<sub>2</sub>O. M. F. R.

1ST AND 2ND COLUMNS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH COLUMNS

5TH COLUMN

6TH COLUMN

7TH COLUMN

8TH COLUMN

9TH COLUMN

10TH COLUMN

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12TH COLUMN

13TH COLUMN

14TH COLUMN

15TH COLUMN

16TH COLUMN

17TH COLUMN

18TH COLUMN

19TH COLUMN

20TH COLUMN

21ST COLUMN

22ND COLUMN

23RD COLUMN

24TH COLUMN

25TH COLUMN

26TH COLUMN

27TH COLUMN

28TH COLUMN

29TH COLUMN

30TH COLUMN

31ST COLUMN

32ND COLUMN

33RD COLUMN

34TH COLUMN

35TH COLUMN

36TH COLUMN

37TH COLUMN

38TH COLUMN

39TH COLUMN

40TH COLUMN

41ST COLUMN

42ND COLUMN

43RD COLUMN

44TH COLUMN

45TH COLUMN

46TH COLUMN

47TH COLUMN

48TH COLUMN

49TH COLUMN

50TH COLUMN

51ST COLUMN

52ND COLUMN

53RD COLUMN

54TH COLUMN

55TH COLUMN

56TH COLUMN

57TH COLUMN

58TH COLUMN

59TH COLUMN

60TH COLUMN

61ST COLUMN

62ND COLUMN

63RD COLUMN

64TH COLUMN

65TH COLUMN

66TH COLUMN

67TH COLUMN

68TH COLUMN

69TH COLUMN

70TH COLUMN

71ST COLUMN

72ND COLUMN

73RD COLUMN

74TH COLUMN

75TH COLUMN

76TH COLUMN

77TH COLUMN

78TH COLUMN

79TH COLUMN

80TH COLUMN

81ST COLUMN

82ND COLUMN

83RD COLUMN

84TH COLUMN

85TH COLUMN

86TH COLUMN

87TH COLUMN

88TH COLUMN

89TH COLUMN

90TH COLUMN

91ST COLUMN

92ND COLUMN

93RD COLUMN

94TH COLUMN

95TH COLUMN

96TH COLUMN

97TH COLUMN

98TH COLUMN

99TH COLUMN

100TH COLUMN

SHERMAN, Ya. I.

Sherman, Ya. I. "German ceramic industry," in symposium: Syr'-yevyye resursy tonkokeram  
prom-sti SSSR i puti ikh ispol'zovaniya, Moscow-Leningrad, 1946, p. 42-43

SC: U-2888, Letopis Znurnal'nykh Statey, No. 1, 1949

**Casting properties of ceramic bodies.** YA. I. SHERMAN. *Steklo i keram.*, 6 (1) 15-18 (1949). The porosity and water absorption of cast porcelain faience ware was found, to be considerably lower than the porosity of molded ware. Pressure created during casting exerted a much smaller effect upon the porosity and electrical properties than did vacuum treatment of the slip. Pouring under pressure resulted in a noticeable increase in the mechanical strength of the dry product and, to a lesser degree, in the fired product. Casting under pressure facilitated the thickening of the body, while casting under pressure and vacuum treatment of the slip produced uniform structure throughout the body. B Z K

H &amp; K

SHERMAN, J. I.

Proizvodstvo sanitarno-stroitel'noy keramiki.  
Moscow, Gosudarstvennoe izdatel'stvo Literatury po Stroitel'ny  
Materialam, 1951. pp. 209, photos, diags., tabs., bibliog.;  
22 x 14; blue and buff boards.

SHERMAN, Yakov Iosifovich; OVCHINSKIY, A.F., inzh., nauchnyy red.;  
KOSYAKINA, Z.K., red.izd-va; KOMAROVSKAYA, L.A., tekhn.red.

[Production of sanitary structural ceramics]Proizvodstvo  
sanitarno-stroitel'noi keramiki. Izd.2., perer. i dop. Mo-  
skva, Gosstroizdat, 1963. 149 p. (MIRA 16:3)  
(Sanitary engineering--Equipment and supplies)  
(Ceramics)

"Determination of Permissible Number of Short-Circuit Current Cut-offs of a Low-Oil Content Circuit Breaker According to the Conditions of Lowered Electrical Strength of Its Internal Insulation," with KAPLAN, V. V., and NASHATIN, V. M., p. 40

High Voltage Technique, Moscow, Gosenergoizdat, 1958, 664pp  
(Series: Its Trudy, No. 195)

This collection of articles sums up the principal results of investigations and studies made by Prof. A. A. Gorev, Dr. Tech. Sci., and his staff in the field of high voltage phenomena and techniques at LPI (Leningrad Polytech Inst.) It was at this institute that Prof. Gorev completed his higher scientific education and then taught and carried on his investigations in the field until his death in 1953. In 1956, by decree of Min of Higher Education, the High-Voltage Lab. at LPI was named after A. A. Gorev.

8(3)

SOV/112-59-3-4927

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 3, p 90 (USSR)

AUTHOR: Kaplan, V. V., Nashatyr', V. M., and Sherman, Ya. N.

TITLE: Determination of Permissible Number of Short-Circuit-Current Interruptions by a Low-Oil-Content Circuit Breaker on the Basis of the Impaired Electric Strength of Its Internal Insulation (Opredeleniye dopustimogo chisla otklyucheniya toka korotkogo замыкания маломасляным выключателем по условиям снижения электрической прочности его внутренней изоляции)

PERIODICAL: Tr. Leningr. politekhn. in-ta, 1958, Nr 195, pp 460-475

ABSTRACT: Methods are developed for determining the guaranteed number of short-circuit-current interruptions by a low-oil-content circuit breaker; the methods are based on investigations of the internal insulation of a type MG-110 low-oil-content "Elektroapparat" make circuit breaker, conducted in the high-voltage laboratory of LPI. (1) First, the circuit breaker is to be tested for

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8(3)

SOV/112-59-3-4927

Determination of Permissible Number of Short-Circuit-Current Interruptions . . . .

many interruptions of its rated short-circuit current. It is permitted to stage these tests at a considerably lower voltage; however, the time of arc burning should be as long as the time under actual short-circuit clearing conditions. From the standpoint of chamber-insulation contamination, such test conditions are equivalent to the conditions of breaker operation under its rated voltage. (2) Then the internal-insulation resistance should be measured by a megohmmeter, leakage currents due to an applied rectified voltage should be determined, and oil samples should be taken. (3) As a next step, the insulation of the breaker with open contacts is tested by an oscillatory voltage similar to the actual recovery voltage; the crest value of the testing voltage is selected equal to the most probable surge voltage observed in the network in question. The above tests can be staged by means of a "switching-surge generator" developed and built in the high-voltage LPI laboratory (a detailed description of the device is presented). In selecting frequency of the test voltage, it

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8(3)

SOV/112-59-3-4927

Determination of Permissible Number of Short-Circuit-Current Interruptions . . . .

should be kept in mind that the insulation is more strained with a lower frequency of the surge-voltage oscillations. (4) Measurements according to items 2 and 3 are repeated with gradually increasing surge amplitudes in order to determine the margin of the insulation under test. (5) The insulation measurement according to item 2 is repeated; thereupon, to the breaker or to its individual arc-rupturing contacts a commercial-frequency voltage is applied which exceeds by 20-25% the voltage most probable under the operating conditions of the breaker in question. (6) If the state of insulation permits, the testing procedure (items 1-5) is again repeated. The investigations by the above method have shown that, after 80 or more openings (of currents close to the rated duty 13,200 amp), the MG-110 breaker and its internal insulation have been in good condition: infinite insulation resistance and leakage current of 1 microamp or less, the insulation has withstood AC voltage for 8 hours and also surge impulses with peak values as high as 7 times the line-to-ground

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8(3)

SOV/112-59-3-4927

Determination of Permissible Number of Short-Circuit-Current Interruptions . . . .

voltage. The chamber insulation was impaired only when surge impulses were applied after 94 openings of short-circuit currents. The authors permit 10 openings of short-circuit currents by the MG-110 breaker under operating conditions, with inspection or oil change. Investigation results are tabulated.

R.A.M.

Card 4/4

8(2)

SOV/105-59-7-22/30

AUTHOR: Sherman, Ya. N., Engineer

TITLE: A Device for the Direct Testing of High-voltage Apparatus  
(Ustanovka dlya pryamykh ispytaniy vysokovol'tnykh apparatov)

PERIODICAL: Elektrichestvo, 1959, Nr 7, pp 81 - 83 (USSR)

ABSTRACT: At the Leningradskiy filial V&I (Leningrad Branch of the All-Union Electrotechnical Institute) a method of testing high-voltage apparatus as to their disconnectibility was worked out and investigated 1956 - 1958. In this method the summation of the reactive power of the shock oscillator and of the oscillatory circuit was attained by their being connected in series. Figure 1 shows the basic wiring scheme of the device, which is briefly described. For the purpose of warranting optimum utilization of the shock oscillator efficiency and a long life of the condensers which are used in the oscillatory circuits of A. A. Gorev used here, the duration of short-circuits must be reduced to a minimum. This is attained if no transition process of reduced frequency occurs. The necessary condition is written down. In order to attain the best possible utilization of the condensers, should their nominal voltage be different from planned voltage, as well as in the testing of apparatus at increased or reduced voltages, intermediate

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A Device for the Direct Testing of High-voltage Apparatus SOV/105-59-7-22/30

transformers are used (Figure 2 shows such a basic circuit). Figure 3 shows such a circuit according to which the investigations of the joint work of the shock oscillator TI-12 and of the oscillatory circuit were carried out at the aforementioned institute. Also the oscillograms obtained by the experiment are given. In a summary, it is said that the use of a circuit with series-connected shock oscillators and oscillatory circuit of Gorev makes it possible to summate their efficiencies and thus to increase the testing efficiency of the laboratory in the case of direct tests. The circuit permits a combination of the decrease of short-circuit currents and, in some cases, a compensation of part of the inductivity in the oscillatory circuit, so that the installed efficiency of the shock oscillator and of the oscillatory circuit can be fully utilized. There are 6 figures.

ASSOCIATION: Leningradskiy filial Vsesoyuznogo elektrotekhnicheskogo instituta im. Lenina (Leningrad Branch of the All-Union Electrotechnical Institute imeni Lenin)

SUBMITTED: December 12, 1958

Card 2/2

SHERMAN, Ya. N.

Cand Tech Sci - (diss) "Joint performance of shock generator and oscillation circuit of A. A. Gorev in direct testings of high-voltage apparatus as to switching capacity." Leningrad, 1961. 20 pp; with diagrams; (State Committee of the Council of Ministers USSR for Automation and Machine-Building, All-Union Order of Lenin Electrical Engineering Inst imeni V. I. Lenin, Leningrad Affiliate); 150 copies; price not given; (KL, 10-61 sup, 220)

SHERMAN, Ya.N., inzh.

Joint operation of an impulse generator and Gorev's tank circuit in the direct testing of the performance of circuit breakers. Elektrichestvo no.5:52-57 My '61. (MIRA 14:9)

1. Vsesoyuznyy elektrotekhnicheskii institut imeni Lenina, Leningradskiy filial.

(Electric circuit breakers--Testing)

ZAKHAROV, S.N., kand.tekhn.nauk; KAPLAN, V.V., inzh.; IONOV, V.V., inzh.;  
OSIPOVA, T.V., inzh.; SHERMAN, Ya.N., inzh.; SHESHIN, B.A., inzh.

New MG-10 and MG-20 generator switches. Vest. elektroprom. 32 no.3:  
71-76 Mr '61. (MIRA 15:6)

(Electric switchgear)

SHERMAN, Ye.

Grouping elements of operations in establishing production  
standards. Sots.trud no.2:90-97 F '57. (MLRA 10:5)  
(Production standards)



AUTHOR: Sherman, Ye.I. 3-58-2-15/33

TITLE: Meeting the Needs of Industry (Idya navstrechu nuzhdam promyshlennosti)

PERIODICAL: Vestnik Vysshey Shkoly, 1958, # 2, pp 65-67 (USSR)

ABSTRACT: Because of the lack of engineer-economists, some vtuzes in 1957 began training in this field. At the Moscow Aviation Institute this task was entrusted to the Inzhenerno-ekonomicheskii fakultet (Engineering-Economic Faculty). The number of hours were increased for the following courses: "Cutting, Machine Tools and Instruments", "Technology of Aircraft Building", "Technical Normalization", and the following additional subjects were introduced: "Automation of Production Processes" and "Organization of Labor and Wages". Special programs provide courses in "Organization of Production" and "The Economics of the Aviation Industry". Much of the time allotted for this subject is used for practical and laboratory exercises. The students are taught to compute the technical standards for operating metalcutting lathes, for bench work, cold and drop forging, welding and assembling.

Card 1/2 In the laboratory of technical normalization the students elaborate norms for the cutting process, calculate the times

Meeting the Needs of Industry

3-58-2-15/33

for fixing and removing parts, assembling units of engines and aircraft. They also prepare equipment index cards, study the organization of one-man-operation of several machine tools, etc.

In the course "Organization of Labor and Wages", the students compute the workmen wages and various indices of labor, analyze the structure of wages, etc.

The students prepare 3 projects - on machine parts, technology and organization of labor, and technical normalization, and accomplish 3 works - on political economy, planning and economics of the aviation industry. During the first half (4 weeks) of the practical training, the students work as normalization clerks in the labor and pay office; during the second half - in the plants norm-research office.

ASSOCIATION: Moskovskiy aviatsionnyy institut imeni S. Ordzhonikidze (The Moscow Aviation Institute imeni S. Ordzhonikidze)

AVAILABLE: Library of Congress

Card 2/2

MAKSIMOV, A.; SHERMAN, Ye.

Review of output norms at machinery manufacturing plants. Sots. trud  
no.2:79-85 F '58. (MIRA 11:1)  
(Machinery industry--Production standards)

SHERMAN, Ye.

To examine and utilize working time properly. Sots.trud no.12:  
87-93 D '58. (MIRA 13:4)  
(Time study)

SHERMAN, Yn.; MOLCHANOVA, N.; ZAGIROVA, R.

Use of calculating machines for the analysis of wage systems.  
Sots.trud 4 no.8:66-71 kg '59. (MIRA 13:1)  
(Wages) (Accounting machines)

SHERMAN, Ye.

Choosing a suitable operational procedure in setting up  
technically justified standards. Biul.nauch.inform.: trud i  
zar.plata no.5:11-16 '59. (MIRA 12:6)  
(Turning) (Production standards)

SHERMAN, Ye.

Working out norms for the number of auxiliary workers.  
Biul.nauch. inform.; trud i zar. plata 3 no.1:21-32 '60.  
(MIRA 13:6)  
(Machinery industry--Production standars)

LYASNIKOV, I.; KHOLODNAYA, G., SHERMAN Ye.

"Principles of establishing work norms in an industrial enterprise"  
by A.D.Gal'tsov. Reviewed by I.Liashnikov, G.Kholodnaia, E.Sherman.  
Sots.trud 7 no.1:155-159 Ja '62. (MIRA 15:4)  
(Production standards) (Gal'tsov, A.D.)



SHERMAN, Ye.Ye.; SHERMAN, I.Ye.

Machine for priming and painting wood parts. Der. prom. 8 no.9:  
26-27 S '59. (MIRA 12:12)

(Wood finishing)

SHERMAN, Yu. G.

Kinetics and vapor phase oxidation mechanism of aromatic hydrocarbons. VI. The naphthalene oxidation mechanism over vanadium catalyst. I. I. Ioffe and Yu. G. Sherman (K. E. Voroshilov Inst. Org. Intermediates and Expt. Moscow). Zhur. Fiz. Khim. 29, 692-8 (1955); cf. C.A. 50, 10891/.—The oxidation of the intermediate naphthalene oxidation products, 1-naphthoquinone and phthalic and maleic anhydrides, was studied over V-K sulfate catalyst on  $\text{SiO}_2$  gel, to explain the data on the naphthalene oxidation mechanism. The activation energies of the oxidation reactions were 11,500 cal./mol. for 1,4-naphthoquinone, 28,000 cal./mol. for phthalic anhydride, and 10,500 cal./mol. for maleic anhydride. The assumption that the 1-naphthoquinone is the principal intermediate in the naphthalene oxidation to phthalic anhydride was found to be incorrect from the catalytic oxidation tests of 1-naphthoquinone in vacuum, which resulted in the conversion of only 20-25% naphthoquinone into phthalic anhydride, and the total oxidation scheme of naphthalene, in agreement with results obtained, can be expressed as: naphthalene  $\rightarrow$  naphthoquinone  $\rightarrow \text{CO}_2 + \text{H}_2\text{O}$  and also naphthalene  $\rightarrow$  phthalic anhydride  $\rightarrow$  maleic anhydride  $\rightarrow \text{CO}_2 + \text{H}_2\text{O}$ .  
W. M. Sternberg

LFH

SHERMAN, I. I.

USSR.

11236\* Investigations in the Field of the Kinetics and Mechanism of the Vapor-Phase Oxidation of Aromatic Hydrocarbons. *Issledovaniia v oblasti kinetiki i mekhanizma parofaznogo okisleniia aromaticeskikh uglevodorodov. VI. Oxidation Mechanism of Naphthalene on Vanadium Catalysts. Mekhanizm okisleniia nafilina na vanadievyykh katalizatorakh.* (Russian.) I. I. Ioffe and Iu. G. Sherman. *Zhurnal Fizicheskoi Khimii*, v. 29, no. 4, Apr. 1955, p. 692-698. Includes tables, graph. 6 ref.

IOFFE, I.I.; SHERMAN, Yu.G.

Research in the field of kinetics and mechanism of vapor-phase oxidation of aromatic hydrocarbons. Part 6. Mechanism of the oxidation of naphthalene on vanadium catalysts. Zhur.fiz.kh. 29 no.4:692-698 Ap '55.  
(MLRA 8:8)

1. Institut organicheskikh poluproduktov i krasiteley im. K.Ye.  
Voroshilova, Moskva. (Naphthalene) (Oxidation)  
(Catalysts, Vanadium)

SHERMAN, YU. G.

U S S R .

6768\* Investigations of the Kinetics and Mechanics of the Vapor-Phase Oxidation of Aromatic Hydrocarbons. Issledovaniya v oblasti kinetiki i mekhanizma parofaznogo oksleniya aromaticeskikh uglevodorodov. V. Kinetics of Oxidation of Naphthalene on a Mixed Vanadium Catalyst. Kinetika oksleniya nافتalina na smeshannom vanadievom katalizatore. (Russian.) I. I. Ioffe and Yu. G. Sherman. Zhurnal Fizicheskoi Khimii, v. 28, no. 12, Dec. 1954, p. 2095-2106.  
Mathematical analysis. Tables, graphs, sketches. 5 ref.

Sherman, J. C.

6

Kinetics and mechanism of the vapor-phase oxidation of aromatic hydrocarbons. V. Kinetics of oxidation of naphthalene over a mixed vanadium catalyst.

J. I. Ioffe and Yu. G. Sherman. *Zhur. Fiz. Khim.* 28, 2095-2100 (1954); *Chem. Abstr.* 47, 3540f. —The oxidation of naphthalene (I) by atm. O (II) in the presence of a V K sulfate catalyst was studied in a described and illustrated app. under isothermal conditions at temps. from 260 to 400°, initial I concns. from 0.000209 to 0.00063 M, and initial II concns. from 0.00137 to 0.0205 M. The amts. of reaction products obtained, including phthalic anhydride, maleic anhydride, naphthoquinone, CO<sub>2</sub>, and H<sub>2</sub>O, are tabulated throughout the given temp. range for contact times from 0.05 to 0.5 sec. The kinetics of the reaction is described by the equation  $-dI/dt = k_1(I_0)/(1 + k_2(P)^2)$ , where  $P$  represents the reaction products. The tabulated quantities  $k_1$  and  $k_2$  are defined by the equations  $k_1 = Ae^{-E/RT}$  and  $k_2 = k_2^0(1 + Be^{-Q/RT})$ , where  $k_1^0$ ,  $A$ ,  $B$ ,  $E$ , and  $Q$  are  $9 \times 10^4$ ,  $5.13 \times 10^4$ ,  $2.0 \times 10^4$ , 27.4 kcal./mole, and 47.5 kcal./mole, resp. From 300 to 400° the reaction proceeds in the internal-diffusion region. The lower temp. limit of transition rises with increase of initial I concn. It is suggested that the rate-deterg. factors are the rate of desorption of reaction products and that of oxidation of the catalyst surface.

J. W. Lowenberg, Jr.

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 147 - 3/27

Authors : Ioffe, I. I., and Sherman, Yu. G.

Title : Study of the kinetics and mechanism of vapor-phase oxidation of aromatic hydrocarbons. Part 5. Kinetics of oxidation of naphthalin over a mixed vanadium catalyst

Periodical : Zhur. fiz. khim. 28/12, 2095-2106, Dec 1954

Abstract : The study of naphthalin oxidation kinetics with air over a mixed vanadium-potassium-sulfate catalyst was conducted with a thorough analysis of the resultant reaction products. A special isothermal method developed for this investigation is described. Formula determining the rate of reaction of naphthalin oxidation is included. It was established that at 300 - 400° the reaction is shifted into the internal-diffusion zone and the lower temperature limit of this transition increases with the increase in the basic concentration of the naphthalin. The rate of oxidation of the surface layer of the catalyst, which is regenerated during reaction with naphthalin molecules, and the desorption of reaction products are considered the determinant factors of the oxidation process. Five references ; 3 USSR and 2 USA (1935-1952). Tables; graphs; drawings.

Institution: The K. E. Voroshilov Scientific Research Institute of Org. Semiproducts and Dyes.

Submitted : December 11, 1953

NECHAYEV, G.K., kand.tekhn.nauk; VASIL'YEV, Yu.K., kand.tekhn.nauk;  
BOGAYENKO, I.N., inzh.; BEREZYUK, B.S., inzh.; SHERMAREVICH,  
M.G., inzh.

Devices for temperature control in large d.c. machines.  
Vest. elektroprom. 33 no.11:31-34 N '62. (MIRA 15:11)  
(Electric motors, Direct current)



Slonimskiy, A.A.; Abramovskiy, A.A.; Shchegolev, A.A.

Orientational interaction and the widening of the infrared absorption band of acetonitrile in solution. Ukr. izv. khim. v no. 5:543-551 1974 (Jan 17:9)

1. Leningradskiy gosudarstvennyy universitet.

SHERMATOV, G.M.

Natural reproduction of undershrubs in the southwestern  
Kyzylkum. Vop. biol. i kraev. med. no.4:159-165 '63.  
(MIRA 17:2)

ACC NR: AT6023566

(N)

SOURCE CODE: UR/3095/66/036/000/0202/0207

AUTHOR: Terekhin, Yu. V.; Shermazan, V. F.

ORG: None

TITLE: Instrument for determining depth ranges when measured with the "Ladoga" facsimile equipment<sup>2</sup> automatic recorder

SOURCE: AN UkrSSR. Morskoy gidrofizicheskiy institut. Trudy, v. 36, 1966. Metody i pribory dlya issledovaniya fizicheskikh protsessov v okeane (Methods and instruments for studying physical processes in the ocean), 202-207

TOPIC TAGS: facsimile equipment, facsimile recording, auto recorder, data recording, ~~signal recording~~, ~~ocean floor topography~~, oceanographic equipment, oceanographic instrument, oceanography, individual sound equipment, geomorphology

ABSTRACT: Use of the "Ladoga" facsimile equipment as a self-recording depth device has expanded considerably the possibilities for taking soundings in the ocean, as well as for carrying on marine geomorphologic and geologic<sup>3</sup> research. The great difficulty encountered in the use of the equipment is the inability to determine the range (epoch) of depths measured at any given instant. While individual institutes, such as the Marine Hydrophysical Institute of the Academy of Sciences of the Ukrainian SSR, the Institute of Oceanology and the Acoustics Institute, both of the Academy of Sciences of the USSR, have a certain amount of experience in using the

Card 1/2

ACC NR: AT6023566

equipment as a precision depth recorder, the problem of determining the range of depths measured had not been completely solved. This difficulty brought about the design and the construction of a special instrument, designated the "Range Indicator," for use as an adaptor for the "Ladoga" facsimile equipment, the purpose of which is to measure the range and the depth proper recorded on the facsimile equipment at any given moment. The principle of operation of the "Range Indicator" is described and it is concluded that use of the instrument has facilitated equipment operation and eliminated possible errors in determining the recorded range, as well as the depth proper. Orig. art. has: 2 figures.

SUB CODE: 08/SUBM DATE: None/ORIG REF: 004

Card 2/2

ACC NR: AT6023566

(N)

SOURCE CODE: UR/3095/66/036/000/0202/0207

AUTHOR: Terekhin, Yu. V.; Shermazan, V. F.

ORG: None

TITLE: Instrument for determining depth ranges when measured with the "Ladoga" facsimile equipment automatic recorder

SOURCE: AN UkrSSR. Morskoy gidrofizicheskiy institut. Trudy, v. 36, 1966. Metody i pribory dlya issledovaniya fizicheskikh protsessov v okeane (Methods and instruments for studying physical processes in the ocean), 202-207

TOPIC TAGS: facsimile equipment, facsimile recording, auto recorder, data recording, ~~phase recording, signal recording~~, ocean floor topography, oceanographic equipment, oceanographic instrument, oceanography, individual sound equipment, geomorphology

ABSTRACT: Use of the "Ladoga" facsimile equipment as a self-recording depth device has expanded considerably the possibilities for taking soundings in the ocean, as well as for carrying on marine geomorphologic and geologic research. The great difficulty encountered in the use of the equipment is the inability to determine the range (epoch) of depths measured at any given instant. While individual institutes, such as the Marine Hydrophysical Institute of the Academy of Sciences of the Ukrainian SSR, the Institute of Oceanology and the Acoustics Institute, both of the Academy of Sciences of the USSR, have a certain amount of experience in using the

Card 1/2

KNORRING, G.M., kandidat tekhnicheskikh nauk; BELYAKOV, A.A.; KRESLIN'SH,  
E.K., knzhenér; SHERMAZANYAN, Ya.T.; LEYBOVICH, D.S.

Use of PPv wires. Prom.energ. 11 no.12:22-25 D '56. (MIRA 10:1)

1. Gosudarstvennyy proyektnyy institut Tyazhpromelektroproyekt (for Knorring). 2. Gor'kovskoye otdeleniye Gosudarstvennogo proyektnogo instituta Elektroproyekt (for Belyakov). 3. Energosbyt Latvenergo (for Kreslin'sh). 4. Respublikanskiy proyektnyy institut, Yerevan (for Shermazanyan). 5. Trest "Moselektromontazh-2" (for Leybovich).  
(Electric wire, Insulated)

SHERMAZANYAN, Yakov Tigranovich; BAUM, V.A., prof., doktor tekhn.nauk,  
red.; SARKISYAN, M., red.izd-va

[Utilization of solar energy in the national economy] Ispol'-  
zovanie solnechnoi energii v narodnom khoziaistve. Pod red.  
V.A.Bauma. Erevan, Izd. Ob-va po rasprostraneniui polit. i  
nauchn. znanii Armianskoi SSR, 1959. 42 p. (MIRA 13:1)  
(Solar energy)

SHKOLNAYA, Y.A.

PHASE I BOOK EXPIRATION

507/4642

Andreyev, S.S. Energeticheskiy Institut

Teplotekhnika, 1977, 21, 1 (polnitseniyu solnchnoy energii (Heat Power Engineering for the Use of Solar Energy) Moscow, 1970, 192 p. Errata slip inserted. 2,500 copies printed.

Spetsialnyy Agorov: Akademiya nauk SSSR. Energeticheskiy Institut Lenin. S.M. Krichenkovskiy.

Prof. E.A. V.A. Baum, Doctor of Technical Sciences, Professor, M.I. of Publishing House G.B. Gorkhovi 1970. Ed. 1. Lb. Dornblum.

Purpose: The publication is intended for power engineers and specialists interested in the industrial utilization of solar energy.

Contents: This collection of 19 articles is a continuation of an earlier work published under the same title in 1977. The articles present results of investigations conducted in the USSR during the past three years at the Institute of Energy of the USSR Academy of Sciences and in the Energeticheskiy Institut M. SSSR (Power Engineering Institute of the M. SSSR). Problems of the industrial utilization of solar energy, depending on the operational conditions of the solar engines, are analyzed. No personalities are mentioned. References follow each article.

1. S.S. and I.A. Shkolnaya, Research and Development of the

2. S.S. and I.A. Shkolnaya, Method for Determining the Efficiency of the

3. S.S. and I.A. Shkolnaya, Problems in the Economics of Solar Power

4. S.S. and I.A. Shkolnaya, Investigation of Semiconductor

5. S.S. and I.A. Shkolnaya, Optimum Geometry of Solar Semicon-

6. S.S. and I.A. Shkolnaya, Investigation of the Thermal Conductivity of Polymers

7. S.S. and I.A. Shkolnaya, Calculation of the Size of Thermal Storage Battery

8. S.S. and I.A. Shkolnaya, Calculation of the Energy Generated by Solar Power Stations

9. S.S. and I.A. Shkolnaya, Research and Development of the

10. S.S. and I.A. Shkolnaya, Effect of the Selective Characteristics of Absorbing

11. S.S. and I.A. Shkolnaya, Effect of the Selective Characteristics of Absorbing

12. S.S. and I.A. Shkolnaya, Effect of the Selective Characteristics of Absorbing

13. S.S. and I.A. Shkolnaya, Effect of the Selective Characteristics of Absorbing

14. S.S. and I.A. Shkolnaya, Effect of the Selective Characteristics of Absorbing

15. S.S. and I.A. Shkolnaya, Effect of the Selective Characteristics of Absorbing



S/173/60/013/001/004/005  
A:G4/A029

AUTHORS: Shermazanyan, Ya.T. and Aparisi, R.R.

TITLE: Elements of the Automatic Tracking Equipment of a Solar Thermal Plant (STS)

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR, Seriya tekhnicheskikh nauk,  
1960, Vol. 13, No. 1, pp. 57-70

TEXT: The plant is based on an azimuth zenith apparatus coupled with automatic control equipment. The heating problem of the steam boiler by 1,293 reflecting mirrors can be solved by two basically different systems: direct individual automatic sun tracking of the solar-heat units and precalculated sun tracking of these units. The automatic equipment is exposed to wind, rain, snow and temperatures varying between  $-30^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ , etc. Its cost is 10 - 12 % of the total capital investment. The above-mentioned relay systems passed laboratory and practical tests performed in Armenia on the area, where the first solar thermal plant is to be erected. The non-relay systems just being tested present no difficulties. The movement of the reflecting mirror shown is expressed in several equations. The great differences between maximum and minimum values complicate

Card 1/2

SHERMAZANYAN, Ya.

Using solar energy for melting high-purity and heat-resistant materials. Prom. Arm. 4 no.7:56-57 J1 '61. (MIRA 14:7)

1. Institut energetiki AN Armyanskoy SSR.  
(Solar heating)

39534

S/196/62/000/015/005/008  
E194/E155

26.2422 (no. 2219)  
AUTHOR: Shermazanyan, Ya.

TITLE: An automatic solar orientator

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika,  
no.15, 1962, 23, abstract 15 G 134. (Ayastani  
ardyunaberutyuny, no.10, 1961, 70-75 (Armenian));  
(Prom-st' Armenii) no.10, 1961, 59-63 (Russian)).

TEXT: An automatic device is described to control the  
orientation of a solar power generating equipment. Graphs and  
design formulae are given for determining the principal angle and  
parameters of the optical servo-system, which rotates the equipment  
to follow the apparent motion of the sun. A radiation diagram is  
given of a chemical solar reactor installed in the Institut  
organicheskoy khimii AN ArmSSR (Institute of Organic Chemistry of  
the AS Arm.SSR) and a circuit diagram of the automatic control  
circuit of the orientator, also a schematic sketch of the  
arrangement of the parts. The principal components and operating  
principles are as follows. The sun's rays falling on the mirror-  
orientator are reflected onto a parabolic-cylindrical mirror  
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An automatic solar orientator

S/196/62/000/015/005/008  
E194/E155

concentrator which directs the rays onto the reactor filled with chemically reacting substances. Since only the luminous part of the solar spectrum is required to activate the chemical process, the heat rays are trapped by cooling water contained in the reactor jacket. Photo-electric pick-ups in the form of tubes with photo-impedances are fitted on the path between the orientator and the parabolic-cylindrical concentrator. As the sun moves a greater or lesser amount of its rays enter the tube and act on the photo-impedances which switch on electric motors to make the orientator track the sun. The pick-up has two zenith tubes, one of which is for alteration up to noon as the sun rises, and the other for the afternoon as it sets; also one azimuth and one signal tube in case there is no sunlight. An electric circuit is given of the automatic device with combinations of photo-electric, ohmic, inductive and capacitative impedances. The use of photo-electric pick-ups ensures stable operation of the solar power equipment. 7 illustrations, 5 references.

[Abstractor's note: Complete translation.]

Card 2/2

L 22673-66 EWT(1)/EWT(m)/EPF(n)-2/T/EMP(t)/EMP(k)/ETC(m)-6 JD  
ACC NR: AP6006191 SOURCE CODE: UR/0377/65/000/004/0005/0010

AUTHORS: Vartanyan, A. V.; Shermazanyan, Ya. T. (Candidate of technical sciences)

ORG: Armenian Basic Laboratory, All-Union Scientific Research Institute for Current  
Sources (Armyanskaya bazovaya laboratoriya, Vsesoyuznogo n.-i. instituta  
istochnikov toka) 46  
B

TITLE: Investigation of <sup>21,74,55</sup>heat flow control systems in constant-power solar furnaces 18,4

SOURCE: Geliotekhnika, no. 4, 1965, 5-10

TOPIC TAGS: solar furnace, temperature distribution, temperature stabilization,  
solar radiation intensity, power optimization

ABSTRACT: The governing parameters behind a power-regulation method for a constant-strength solar furnace are discussed. The power regulation is defined by the equation  $P_{reg} = A \cdot P_{max} = \text{const}$ , where  $A = c \cdot k = \text{const}$ . The technique consists of defining  $c$  as a function of  $k$ . To this end, it is assumed that the sun can be represented as a point-radiation source, the parabolic concentrator has an idealized geometry and receives parallel beams of radiation with constant density. Three types of regulators are analyzed: a screen type regulator placed perpendicularly to  
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ACC NR: AP6006191

the concentrator axis which yields, for the parameter A,

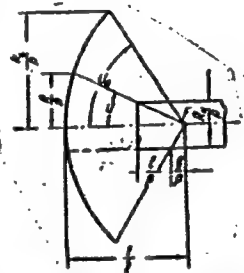
$$A = (1 - \cos \alpha) \cdot k;$$

a cylindrical type regulator which screens the external part of the reflected radiant flux, and which gives

$$A = \frac{\arctg \frac{\frac{R_u}{p}}{\frac{1}{p} + \frac{R_u}{p} \cdot \frac{1}{\lg u_0}}}{\lg^2 \frac{u_0}{2}} \cdot k,$$

where the various nomenclature are defined in Fig. 1;

Fig. 1. Schematic of a cylindrical regulator screening the external part of the radiant flux from the concentrator.



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ACC NR: AP6006191

a cylindrical type regulator which screens the internal part of the reflected flux.  
This latter one yields the equation

$$A = \left[ 1 - \frac{\operatorname{arctg} \frac{\frac{R_a}{p}}{\frac{1}{2} \left[ 1 - \left( \frac{R_a}{p} \right)^2 \right] - \frac{1}{p}}}{\operatorname{tg}^2 \frac{\alpha_0}{2}} \right] \cdot k.$$

Orig. art. has: 23 equations and 8 figures.

SUB CODE: 20/ SUBM DATE: 21Jun65/ ORIG REF: 001/ OTH REF: 001

Card 3/3

BERLAZANYAN, Ya.L.; NERLICHYAN, T.L.

Large-scale automatic heliogrinding unit for testing materials  
by the method of fast radiation aging. Geliotekhnika no.5:45-50  
(MFP: 19:1)  
1965.

1. Armazonskaya bazovaya laboratoriya Vsesoyuznogo nauchno-issledo-  
vatelskogo instituta istochnikov tekhn. Submitted June 16, 1965.



ACC NR: AP6018090

(A)

SOURCE CODE: UR/0377/65/000/005/0045/0050  
66 64 B

AUTHOR: Shermazanyan, Ya. T. (Candidate of technical sciences); Nersisyan, T. A.

ORG: Armenian Base Laboratory, All-Union Scientific Research Institute of Current Sources (Armyanskaya bazovaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo instituta istochnikov toka)

TITLE: Large automatic heliotechnical installation for testing materials by the accelerated light aging method

SOURCE: Geliotekhnika, no. 5, 1965, 45-50

TOPIC TAGS: solar energy conversion, testing laboratory, nonmetal aging, material failure, material stability, light aging

ABSTRACT: The article describes the BGUS concentrator, a new type of large heliotechnical installation which has been in operation in Yerevan since 1963. (Ya.T. Shermazanyan, G. P. Kazanchyan, M. M. Markosyan, "Heliotechnical Installation for Testing Materials Aging under the Action of Solar Rays," Avt. svid. no. 139513, Byulleten' izobreteniy, 1961, no. 13). It was first proposed by the Armenian Affiliate of the All-Union Scientific Research Institute of Electromechanics as a device for accelerating light aging in the testing of electrical insulation materials. Subsequent investigations and development were conducted by the Energetics Institute of the Armenian SSR.

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L 38179-66

ACC NR: AP6018090

2

A special feature is its automatic tracking of the sun by the use of light-sensitive cells in differential photoelectric sensors of the FS-K type. The authors discuss such related matters as the reflectors (unique in preserving the full spectrum of solar radiation, an important facet of light aging investigations), the distribution of the radiation on the operating surface of the wall, and the problem of site selection. At the present time, smaller models (MGUS) are being developed on the basis of the BGUS. Orig. art. has: 2 figures.

SUB CODE: 20,11,10/ SUBM DATE: 16Jun65/ ORIG REF: 006

*ms*  
Card 2/2

*SHERMATOV, A. N.*

AID P - 336

Subject : USSR/Mining  
Card : 1/1  
Author : Polyanskiy, A. P.  
Title : Construction defects of a tightening arrangement packer  
Periodical : Neft. Khoz., v. 32, #5, 48, My 1954  
Abstract : The author remarks on the comments of B. S. Tolmachev published in the Neft. Khoz., No. 4, 1953 concerning the article by M. A. Zelinskiy and A. N. Shermatov "For a Rational Construction of Equipment for the Bottom and Mouth of Gas Wells", published in the Neft. Khoz., No. 7, 1952. The author considers that the packer, shown on fig. 5, of the reviewed article, has many defects and is unsatisfactory in service.  
  
Institution : None  
Submitted : No date

SHERMENEV, I.; KUZNETSOVA, V.

On the banks of the Angara River. NTC 2 no.4:56-58 Ap '60.  
(MIRA 13:6)

1. Zaveduyushchiye domami tekhniki pravogo i levogo beregov  
stroitel'stva gidroelektrostantsii, g.Bratsk.  
(Bratsk Hydroelectric Power Station)

... .., Mikhail K. ...

775  
.84

SEKULAKH Y.Y. ... YU STRAKHOVANIYE V SSSR (AGRICULTURAL INSURANCE IN  
THE USSR) ... YU., GOLOSIN, 1956. 172 p. TABLES. BIBLIOGRAPHY 1  
ACT. ...

KON'SHIN, Fedor Vasil'yevich, prof.; SHERMENEV, M., otv. red.; SHATROVA, T.,  
red. izd-va; LEBEDEV, A., tekhn. red.

[State insurance in the U.S.S.R.] Gosudarstvennoe strakhovanie v  
SSSR. Izd. 4., perer. i dop. Moskva, Gosfinizdat, 1961. 335 p.  
(MIRA 14:9)

(Insurance)

SHERMENEV, M.K., kand. ekon. nauk; MOTOV, S.I.; KOLYCHEV, L.I.,  
kand. ekon. nauk; BRAGINSKIY, L.V.; GRIGOR'YEV, S.T.;  
PYLAYEVA, A.P., red.; BALLOD, A.I., tekhn. red.

[Finance and the issuing of credit to agricultural enter-  
prises] Finansy i kreditovanie sel'skokhoziaistvennykh pred-  
priati. Moskva, Sel'khozizdat, 1963. 342 p.

(MIRA 16:5)

(Agriculture—Finance)

MEINING, T.O.

MEINING, T.O. "Some Data of the Vibration of Brownian Motion  
Compressed." in Higher Education and Science 3: 1-4  
Uimeni M. I. Kuznetsov. Tbilisi, 1956. (Dissertation  
for the Degree of Candidate in Physico-mathematical Science)

So: Krievijas Latvijas, No. 17, 1956



SOV/137-58-11-23428

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 227 (USSR)

AUTHOR: Shermergor, T.D.

TITLE: On the Theory of Relaxation Phenomena in Solids (K teorii relaksatsionnykh yavleniy v tverdykh telakh)

PERIODICAL: Dokl. 7-y Nauchn. konferentsii, posvyashch. 40-letiyu Velikoy Oktyabr'sk. sots. revolyutsii. Nr 2. Tomsk, Tomskiy un t, 1957, pp 68-69

ABSTRACT: The author develops a theory of the relaxation phenomena in solids. In considering a nonhomogeneous, isotropic, unbounded elastic body, the author utilizes a method of the thermodynamics of unbalanced conditions proposed by Leontovich and developed by Finkel'shteyn and Fastov in application to stress relaxation. The computations provide formulae for the elastic moduli, the latter being determined from the combination of all periods of relaxation. The connection existing between the formulae obtained and a generalized form of Hooke's law is discussed.

V. N

Card 1/1

SHERMERGOR, T.D.

Thermodynamic theory of elastic aftereffect. Izv. vys. ucheb. zav.;  
Fiz. no.1:78-85 '58. (MIRA 11:6)

1. Sibirskiy metallurgicheskiy institut imeni S. Ordzhonikidze.  
(Elasticity)

SHERMERGOR, T.D., kand.fiz.-mat nauk

Effect of relaxation processes on the curve of plastic flow  
of metals. Izv. vys. ucheb. zav.; chern. met. no.3:111-118 Mr  
'58. (MIRA 11:5)

1.Sibirskiy metallurgicheskiy institut.  
(Deformations (Mechanics))  
(Metals, Effect of temperature on)

2\*(8)

AUTHOR: Shermergor, T.D.

SOV/155-58-5-25/37

TITLE: On the Thermodynamic Description of Processes Being not in the State of Equilibrium

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskoye nauki, 1958, Nr 5, pp 147 - 150 (USSR)

ABSTRACT: The author shows that the usual relaxation relations

$$A = \bar{A} + \langle \phi, \dot{a} \rangle,$$

where  $\bar{A}$  is the value of the column matrix  $A$  corresponding to the equilibrium,  $\dot{a}$  a known function of time,  $\phi = \exp(-St)F$ ,  $F$  a rectangular  $(n+m-k) \times k$  - matrix,  $S$  a quadratic  $(n+m-k) \times (n+m-k)$  - matrix and

$$\langle \phi, \dot{a} \rangle = \int_0^t \phi(t-\tau) \dot{a}(\tau) d\tau$$

can be derived from the equation

$$J_i = L_{ik} X_k$$

✓

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On the Thermodynamic Description of Processes  
Being not in the State of Equilibrium

SOV/155-58-5-25/37

for stationary processes, where  $X_i$  are forces,  $J_i$  the currents  
and  $\|L_{ik}\|$  is a symmetric matrix according to Onsager. Some  
examples are given.

There are 7 references, 6 of which are Soviet, and  
1 American.

ASSOCIATION: Sibirskiy metallurgicheskii institut (Siberian Metallurgical  
Institute)

SUBMITTED: July 21, 1958

Card 2/2

AUTHOR Shermergor F. D.

SOV/126 6-6-16/25

TITLE. On the Theory of Relaxational Phenomena in Solid Bodies (K teorii relaksatsionnykh yavleniy v tverdykh telakh)

PERIODICAL: Fizika metallov i metallovedeniye, 1958, Vol 6, Nr 6, pp. 1077-1080 (USSR)

ABSTRACT: Theoretical investigations of relaxation of stresses and deformations in solids are usually generalizations of Hooke's law or they use the Boltzmann theory of elastic after-effects or thermodynamics of non-equilibrium processes. The thermodynamic method is the most general. It was applied by the author to calculate stress tensor for a non-uniform isotropic unbounded solid. The author shows that, in general, the dynamic values of elastic moduli are determined by a spectrum of relaxation times. The paper is entirely theoretical. There are 8 Soviet references.

ASSOCIATION: Sibirskiy metallurgicheskiy institut im. S. Ordzhonikidze (Siberian Metallurgical Institute im. S. Ordzhonikidze)

SUBMITTED: February 4, 1947 and after revision, April 10, 1957.

Card 1/1

AUTHOR: Shermergor, T. D.

57-28-5-28/33

TITLE: On the Thermodynamic Theory of Relaxation Processes (K termo= dinamicheskoy teorii relaksatsionnykh protsessov)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 3, pp. 647-654 (USSR)

ABSTRACT: A relation between the strain and deformation of a heterogeneous isotropic elastic body is found here. The investigation is performed according to reference 3 by Finkel'shteyn and Fastov, only the temperature is considered variable. The heterogeneous body is subdivided into so many N-domains that within each domain the medium may be considered homogeneous. For marking the instantaneous deviation of the system-state from the equilibrium position the relaxation tensor  $\xi_{ikv}$  for each domain is introduced. The

equilibrium value of the relaxation tensor should be  $\bar{\xi}_{ikv}$ . Then

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$$\xi_{ikv} - \bar{\xi}_{ikv} = \zeta_{ikv}$$

On the Thermodynamic Theory of Relaxation Processes

67-23.9-28/33

has a simple physical meaning: it is the additional deformation which must instantaneously be given to the investigated body-element, in order to put it into the equilibrium state. The different elements are expressed by different relaxation tensors and to each tensor corresponds its relaxation time. -- The computation of the strain- and of the deformation-tensor for a heterogeneous isotropic body according to the method of the non-equilibrium states of thermodynamics is performed. The equations (27) for the strain- and the deformation-tensor are derived and compared with Boltzmann's superposition-principle for creeping and for relaxation. It is shown that the formula (27) agrees with one of the forms of Boltzmann's principle. On the other hand the general form of Hooke's law follows from (27). Summarizing, the author states that in the presence of the relaxation-time-spectrum the general Hooke's Law becomes too cumbersome (derivations of  $N$ -th degree occurring, whereas the integral-relations of thermodynamics (27) are considerably more convenient for the solution of various problems.

There are 8 references, all of which are Soviet.

ASSOCIATION: Stalinsk, Sibirskiy metallurgicheskiy institut im. S. Ordzhonikidze  
(Stalinsk Siberian Metallurgical Institute imeni S. Ordzhonikidze)

SUBMITTED: June 8, 1957

Card 2/2

1. Elastic shell--Thermodynamic properties 2. Elastic shell  
--Stresses



SHEMERGOR, T.D., kand. fiz.-mat. nauk, dotsent

Cyclic deformation of solids with elasticity-toughness properties.  
Izv. vys. ucheb. zav.; chern. met. 2 no.3:65-72 Mr '59.  
(MIRA 12:7)

1. Sibirskiy metallurgicheskiy institut. Rekomendovana kafedroy  
fiziki Sibirskogo metallurgicheskogo instituta.  
(Deformation (Mechanics))  
(Elasticity)

SOV/126-7-1-22/28

AUTHOR: Shermergor, T.D.

TITLE: ~~Absorption of Energy by Steel in Plastic Compression~~  
(Pogloshcheniye energii stal'yu pri plasticheskom szhatii)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1959, Vol 7, Nr 1,  
pp 146-150 (USSR)

ABSTRACT: The latent energy of two types of steel has been experimentally determined. The specimens for compression were cylindrical: 17 mm diameter and 25 mm high, 20 mm diameter and 30 mm high, and 13 mm diameter and 20 mm high. The last were used for control purposes. Prior to testing, the specimens were annealed in iron filings at 800°C for 3 hours. A study of microsections showed that no carburization of the surface of the specimens had occurred. Compression was carried out in an Amsler press. In order to avoid bending of the specimen, a sleeve was used, which was lined with heat insulators, and supporting plates made from steel 40KhN, 35 x 6 mm. The surface of the supporting plates was polished and the ends of the specimen ground. Compression was carried out in stages. Deformation was carried out statically at a rate of 5% per minute. This made it possible for the flow curve to be taken down by means of

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SOV/126-7-1-22/28

# Absorption of Energy by Steel in Plastic Compression

of  $\delta Q$  the thermal capacity of the system was determined, as well as the rise in temperature due to plastic deformation. Special precautions were taken to prevent errors. The temperature calculation was carried out by a method suggested by M.A. Bol'shanina (Ref.7) and perfected by Benyakovskiy (Ref.8). The latter obtained the following formula for the differential temperature:

$$T \approx T_1 + (T_2 - T_3) \frac{S_1}{S_3} - \Delta T - T_e$$

where  $T_1$  (see Fig.1) is the maximum temperature of the specimen towards the end of plastic deformation. The second term takes into account a correction for heat removal during deformation. This correction is proportional to the area  $S_1$ .  $(T_2 - T_3)/S_3 = \alpha$  is a constant for the rate at which the temperature of the system and the medium evens out. The third term gives a correction for a possible unsteady galvanometer reading and an uneven heating of the system. The last term gives a correction for an elastic adiabatic heating.  $\Delta T$  and  $T_e$  are calculated from

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SOV/126-7-1-22/28

# Absorption of Energy by Steel in Plastic Compression

the following equations:

$$[(T_1 - \Delta T) - T_2] s_2^{-1} = [T_2 - T_3] s_3^{-1},$$

$$T_e = T_3 - T_4 - [(T_2 - T_3) s_3^{-1}] s_4$$

The above formulae can be simplified as follows:

$$T = T_2 + \alpha(S' + S'') - (T_3 - T_4);$$

$$\alpha = (T_2 - T_3) s_3^{-1}; \quad S' = S_1 + S_2; \quad S'' = S_4$$

which was used as the working formula by means of which the temperature of the specimen and of the experimental steel plates was calculated. For each stage  $\delta A$ ,  $\delta E$  and  $\Delta \epsilon$  were determined, and the stress  $\sigma$  and the full deformation  $\epsilon$  were known. This enabled various graphs to be plotted.

Card 4/5 In Fig.2, curves for the differential absorbed specific energy